

ABSTRACT OF THE DISCLOSURE

The vibration and noise excited by the electromagnetic exciting force in the radial direction of an electric motor are suppressed.

5 In an electric motor 100, a rotor 1 is divided into four rotor pieces 3, 4, 5, and 6 for an axial length of $2L$ of one group of the rotor core, and for example, the four rotor pieces 3, 4, 5, and 6 are ideally $0.29L$, $0.71L$, $0.71L$, and $0.29L$ in axial length in the axial direction, and permanent magnets 2 of the rotor pieces 3, 4, 5, and 6 are arranged in the circumferential direction so that the phase differences of the electrical angle are 0 , π , 0 , and π . Further, when an effect is obtained even if the ideal axial length is changed, the tolerance of the
10 aforementioned axial length is $\pm 0.1L$.
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